SEP 0 6 1989

Virginia Electric and Power Company
ATTN: Mr. W. L. Stewart
Senior Vice President - Power
5000 Dominion Boulevard
Glen Allen, VA 23060

Gentlemen:

SUBJECT: MANAGEMENT MEETING SUMMARY

This letter refers to the Management Meeting held on July 20, 1989, at the Region II Office, Atlanta, Georgia. The meeting concerned activities authorized for your Surry facility, and involved discussions of the Unit 2 Operational Readiness Assurance Program and modifications to the service water system for both Surry units. A list of attendees, a meeting summary, and a copy of your handouts are enclosed.

In accordance with 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and its enclosures will be placed in the NRC Public Document Room.

Should you have any questions concerning this matter, please contact us.

Sincerely,

Original signed by

Stewart D. Ebneter
Regional Administrator

Enclosures:
1. List of Attendees
2. Meeting Summary
3. Handout - Operational Readiness Assurance Program
4. Handout - Justification for Continued Operation

cc w/encls:
W. R. Cartwright
Vice President - Nuclear Operations
J. P. O'Hanlon
Vice President - Nuclear Services
R. F. Saunders
Manager - Nuclear Licensing
M. R. Kansler, Station Manager
Commonwealth of Virginia

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NRC Resident Inspector
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ENCLOSURE 1

MANAGEMENT MEETING LIST OF ATTENDEES

Virginia Electric and Power Company

W. Cartwright, Vice President, Nuclear Operations
F. Moore, Vice President, Power Engineering Services
M. Kansler, Station Manager, Surry
E. Grecheck, Assistant Station Manager, Surry
R. Saunders, Manager, Licensing
R. Blount, Superintendent, Technical Services
B. Stanley, Staff Engineer

Nuclear Regulatory Commission - Region II

S. Ebneter, Regional Administrator, Region II (RII)
B. Grimes, Acting Deputy Regional Administrator, RII
L. Reyes, Director, Division of Reactor Projects (DRP), RII
E. Merschoff, Deputy Director, Division of Reactor Safety (DRS), RII
M. Sinkule, Branch Chief, DRP, RII
P. Fredrickson, Section Chief, DRP, RII
*W. Holland, Senior Resident Inspector, DRP, RII
P. Taylor, Reactor Inspector, DRS, RII
M. Lewis, Project Engineer, DRP, RII
S. Shaeffer, Project Engineer, DRP, RII

Nuclear Regulatory Commission - Headquarters

*B. Buckley, Senior Project Manager, Nuclear Reactor Regulation
*W. Borchardt, Regional Coordinator, Office of the Executive Director for Operations

*Per Telecon

ENCLOSURE 2

The NRC's and VEPCO's staffs met on July 20, 1989, to discuss two separate issues; one being the Surry Unit 2 Operational Readiness Assurance (ORA) Program, and the other involving modifications to the service water (SW) system for both Surry units. The meeting began with opening remarks from VEPCO's Vice President-Nuclear Operations, who stated that the Unit 1 ORA Program was successfully completed with no significant findings. The Vice President further stated that his staff wished to present the proposed Unit 2's program highlighting some differences from the Unit 1 ORA Program in hopes of receiving NRC's concurrence for the change in scope for Unit 2.

The Plant Manager - Surry made the formal presentation of the Unit 2 ORA Program using the handout in Enclosure 3. The presentation began with a summary of the Unit 1 findings resulting from the ORA Program. The licensee identified 230 startup items, however the Plant Manager reiterated that no safety significant concerns were identified. The discussions then focused on the Unit 2 walkdown status. The licensee stated that the Unit 2 walkdowns were approximately 40 percent complete, with no safety significant items identified to date. In addition, startup activities continued in the area of power termination, motor operated valve program, 4160 breakers, instrument air, cable tray covers, and instrument cable replacement.

The Unit 2 proposed walkdown approach and schedule were then discussed. VEPCO plans to complete the walkdowns of Unit 2 containment before startup and proposed to complete the walkdown of systems outside containment by December 31, 1989. The Regional Administrator asked why the NRC should agree to this change in the Unit 2 ORA program. VEPCO responded by stating that they gave a good faith effort in looking at Unit 1, and the findings had little significance. Further, because the walkdowns would be complete by December 31, 1989, the final product would not be compromised. The Vice President - Nuclear Operations for VEPCO stated that they intended to describe the presented program in a new letter, as their presentation commitments differed from their original July 7, 1989 proposal on Unit 2 walkdowns. The Regional Administrator concluded this portion of the meeting by stating that the staff was in agreement with the conceptual program, and that the NRC will review the program scope further when received.

The discussion then focused on the licensee's description of a proposed SW modification. The purpose of the presentation was two-fold: 1) to inform the NRC of the details of the modification and 2) to provide the basis for a planned request for discretionary enforcement to effect the modification. VEPCO distributed a written Justification for Continued Operation (JCO) at the meeting (see enclosure 4), which addressed the use of a temporary SW supply line during the proposed modification. The system figures contained in the JCO were used as a focus of the presentation.

Surry's SW supply to the charging pumps lube oil and seal coolers and the three control and relay room air conditioning chiller units is provided by two six-inch fiberglass lines, one for each nuclear unit. These lines are

susceptible to silting and biological fouling, and cleaning by hydrolasing has caused internal erosion in the fiberglass lines. In addition, because both lines must remain operable during power operation of either unit, cleaning during power operation is prohibited.

VEPCO described the improvements planned for the two SW supply lines, which involves replacing them with larger diameter metallic piping, and adding a third line to allow operating flexibility for periodic cleaning. VEPCO stated that implementation of the described modification would require that one of the six-inch fiberglass lines be taken out of service in order to make tie-ins for the new system piping. To effect the tie-ins without a dual unit shutdown, the licensee proposed a series of steps which involved the use of a temporary SW supply line dedicated to supply one control and relay room chiller SW pump. The temporary line would not meet seismic or missile protection requirements for safety-related SW piping, and would be limited in use for four 24-hour periods. VEPCO further described the compensatory actions which would be put into effect during the periods the temporary line was used, including operator actions and spool piece connections. VEPCO stated it was their intentions to request discretionary enforcement to use the temporary lines during the limited periods. The NRC expressed concern regarding the construction activity on site during Unit 2 startup. VEPCO stated that they are committed to controlling construction activity and to assuring operator access paths to safety-related equipment. The NRC thanked VEPCO for their presentation.

SURRY POWER STATION

UNIT 2 OPERATIONAL READINESS

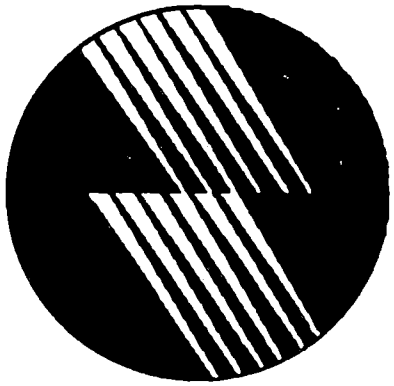
ASSURANCE PROGRAM

NRC INFORMATIONAL MEETING

JULY 20, 1989

ENCLOSURE 3

VIRGINIA POWER



NRC MANAGEMENT

M. R. KANSLER - STATION MANAGER

AGENDA

I. PROGRAM SCOPE & OBJECTIVES

II. SYSTEM WALKDOWNS

- A. UNIT 1 FINDINGS
- B. UNIT 2 APPROACH & SCHEDULE

III. ELECTRICAL SEPARATION VERIFICATION TESTING

- A. POWER SUPPLY TESTING
- B. SAFETY-RELATED PUMP & VALVE POWER VERIFICATION

IV. INTEGRATED LOGIC/FUNCTIONAL TESTING

V. COMMENTS & CONCLUSIONS

OPERATIONAL READINESS ASSURANCE PROGRAM
PROGRAM SCOPE

- PHYSICAL WALKDOWNS OF PIPING/EQUIPMENT USED IN EMERGENCY OPERATING PROCEDURES
- ELECTRICAL SEPARATION VERIFICATION TESTING FOR VITAL EQUIPMENT
- INTEGRATED LOGIC/FUNCTIONAL TESTING OF SAFEGUARDS EQUIPMENT
- DOCUMENT REVIEWS

PROGRAM OBJECTIVES

- PROVIDE ASSURANCE THAT STATION EQUIPMENT IMPORTANT TO SAFETY IS FULLY OPERATIONAL

- TO ENSURE EQUIPMENT IS LOCATED IN THE PROPER TRAIN

UNIT 1 WALKDOWN FINDINGS

- 3341 ITEMS OF NOTE
- 230 STARTUP ITEMS
- NO SAFETY SIGNIFICANT CONCERNS IDENTIFIED
- MINOR DRAWING DISCREPANCIES

UNIT 1 STARTUP WALKDOWN FINDINGS

CATEGORY	TOTAL FINDINGS	STARTUP ITEMS	ITEM DESCRIPTIONS
1) PHYSICAL CONDITIONS	1206	94	RUST, BORIC ACID DEPOSITS, CABLE TRAY COVERS, PACKING LEAKS, CRACKED CONCRETE, BENT TUBING, ETC.
2) TAGGING ISSUES (IDENTIFICATION)	988	11	MISSING OR IMPROPER TAGS
3) DRAWING DISCREPANCIES	479	5	INSTANCES OF MINOR EQUIPMENT NOT ON DRAWING AND CONVERSE
4) VENTILATION	554	6	BENT MATERIAL, BROKEN BOOT, DIRTY FILTERS, INOPERABLE DAMPERS, MISSING ACCESS COVERS, UNSEAL-ABLE BOOT JOINTS, ETC.
5) MATERIAL	10	10	IMPROPER GASKETS IN CC SYSTEM, MISSING INSULATION, NON-QUALIFIED PRESSURE GAUGES, ETC.
6) SEISMIC MOUNTING	56	56	MISSING SUPPORTS, SPRING CANS, AND BOLTS, ETC.
7) HOUSEKEEPING & MISC.	48	48	OIL ON FLOOR, DEBRIS, TAPE ON FITTINGS, ETC.

UNIT 2 WALKDOWN STATUS

- APPROXIMATELY 40% COMPLETE
  - 286 ITEMS OF NOTE
  - 198 ITEMS EVALUATED
  - 26 STARTUP ITEMS
  - NO SAFETY SIGNIFICANT ITEMS

- VERIFIED VALVES LOCATED IN CORRECT TRAIN

- VERIFICATION OF PHYSICAL CONFIGURATION AND CONDITIONS ONGOING

ONGOING UNIT 2 STARTUP ACTIVITIES

- POWER TERMINATIONS
- MOV PROGRAM
- 4160 BREAKERS
- INSTRUMENT AIR
- CABLE TRAY COVERS
- INSTRUMENT CABLE REPLACEMENT

UNIT 2 WALKDOWN APPROACH & SCHEDULE

- SYSTEMS INSIDE CONTAINMENT - BEFORE STARTUP
- SYSTEMS OUTSIDE CONTAINMENT - 12/31/89
  - PRIORITIZE REMAINING SYSTEMS
  - PERFORMED UNDER STATION PROCEDURE
- SIGNIFICANT CONCERNS FROM UNIT 1 WALKDOWNS WERE RESOLVED FOR UNIT 2
- PRE-STARTUP MANAGEMENT WALKDOWNS

ELECTRICAL SEPARATION VERIFICATION TESTING

POWER SUPPLY VERIFICATION (DEAD BUS TESTING)

OBJECTIVE:

- **TO ENSURE THAT TRAIN SEPARATION EXISTS FOR SAFEGUARDS EQUIPMENT WITH RESPECT TO THEIR SOURCE OF ELECTRICAL POWER**

PUMP & VALVE POWER VERIFICATION

OBJECTIVE:

- **TO ENSURE PUMPS AND VALVES FOR EACH TRAIN ARE POWERED FROM THE PROPER ELECTRICAL BUS**

UNIT 1
POWER SUPPLY VERIFICATION

METHOD:

- **COMPLETELY DEENERGIZED EACH ELECTRICAL BUS (INCLUDED 4160/480V SWITCHGEAR, 480V MCC'S, 120 VAC VITAL BUSES AND 125 VDC PANELS).**
- **VOLTAGE READING TAKEN PRIOR TO AND AFTER OPENING EACH BREAKER.**

UNIT 1
POWER SUPPLY VERIFICATION

RESULTS:

- SEVERAL DRAWING PROBLEMS IDENTIFIED DURING RESEARCH PHASE OF WRITING PROCEDURE.
- MOST TEST DISCREPANCIES WERE INSTRUMENTATION MODULES ON THE CORRECT BUS BUT ON DIFFERENT CIRCUITS FROM THOSE SHOWN ON DRAWINGS.
- OTHER DISCREPANCIES INCLUDED COMPONENT LABELING, IMPROPERLY SPARED CIRCUITS AND DUSTY/DIRTY CONDITIONS.
- MOST SIGNIFICANT DISCREPANCY WAS INTERACTION BETWEEN TRAIN 'A' AND 'B' ICCM SYSTEM, WHICH WAS CORRECTED.

UNIT 2
POWER SUPPLY VERIFICATION TESTING
PROPOSED METHODS

H & J BUS:

- **WILL NOT BE DEENERGIZED**

BASIS FOR CHANGE:

- **PREVIOUS BUS OUTAGES (MAINTENANCE PROCEDURES FOR DEENERGIZING THESE BUSES VALIDATE THE ELECTRICAL ON-LINE DIAGRAMS WHICH SHOW TRAIN SEPARATION).**
- **UNIT 1 TEST APPROACH WOULD PLACE UNIT 1 IN TECH SPEC LCO FOR HEAT TRACE AND CROSS-CONNECTED SYSTEMS.**

UNIT 2 POWER SUPPLY VERIFICATION TESTING

120 VAC VITAL BUS CIRCUITS:

- TEST IDENTICAL TO UNIT 1 FOR EACH CIRCUIT

125 VDC CIRCUITS:

- WILL NOT DEENERGIZE CIRCUITS.
- INITIAL VOLTAGE READINGS TAKEN AT FIELD POINTS. BATTERY THEN PLACED ON EQUALIZE CHARGE. SAME FIELD POINTS RECHECKED TO ENSURE VOLTAGE READINGS MATCH THE NEW HIGHER BUS VOLTAGE.
- OPPOSITE TRAIN-DC BUS VOLTAGE AND ESF CIRCUITS WILL BE MONITORED TO ENSURE VOLTAGE DOES NOT CHANGE.

BASIS FOR CHANGE:

- METHOD STILL VERIFIES TRAIN SEPARATION.
- VERY FEW DISCREPANCIES FOUND DURING PERFORMANCE OF UNIT 1 TESTS. SIMILAR DISCREPANCIES IN UNIT 2 WOULD BE IDENTIFIED VIA THIS METHOD.
- ALLOWS 4160V SWITCHGEAR TO REMAIN ENERGIZED.

UNIT 2 POWER SUPPLY VERIFICATION TESTING

CONCLUSIONS ON UNIT 2 APPROACH:

- UNIT 1 DISCREPANCIES WOULD HAVE BEEN IDENTIFIED VIA THIS METHOD.
- PLANT WILL NOT BE PLACED IN AN ABNORMAL CONDITION WITH MINIMUM SAFEGUARDS TO PERFORM TESTING.
- WILL NOT REQUIRE SPECIAL PLANT CONDITIONS.
- STILL VERIFY LOAD LIST ON VITAL BUSES.

UNIT 2 POWER SUPPLY VERIFICATION TESTING

PROPOSED UNIT 2 TEST SCHEDULE:

- PERFORM TESTING ON 'B' TRAIN THIS OUTAGE.
- COMPLETE RESEARCH PHASE OF 'A' TRAIN THIS OUTAGE AND ACTUAL TESTING AT NEXT REFUELING.

BASIS FOR CHANGE:

- UNIT 1 TESTING DISCREPANCIES WERE INSIGNIFICANT AND NOT TRAIN SEPARATION PROBLEMS EXCEPT FOR ICCM. (ICCM PROBLEM ALREADY CORRECTED ON UNIT 2).
- MOST PROBLEMS WITH ELECTRICAL DRAWINGS FOUND DURING TEST DEVELOPMENT. DRAWING DISCREPANCIES FOUND DURING TESTING DEVELOPMENT WILL BE CORRECTED.
- SIGNIFICANT PROBLEMS IDENTIFIED ON 'B' TRAIN WILL BE INVESTIGATED ON 'A' TRAIN.

SAFETY-RELATED PUMP & VALVE POWER SUPPLY VERIFICATION

METHOD:

- VERIFICATION OF SWITCH, BREAKER, AND COMPONENT ON PROPER TRAIN.
- SAME TEST METHOD USED FOR BOTH UNITS.

UNIT 1:

- UNIT 1 PUMPS, VALVES, FANS AND DAMPERS TESTED.
- COMMON PUMPS, VALVES, FANS AND DAMPERS TESTED.
- NO DISCREPANCIES FOUND. OVER 400 COMPONENTS TESTED.

PUMP & VALVE POWER SUPPLY VERIFICATION

UNIT 2:

- **TEST 60 OF APPROXIMATELY 300 COMPONENTS**

BASIS

- **A SAMPLE OF 60 WITH NO DISCREPANCIES GIVES A 95% CONFIDENCE LEVEL THAT LESS THAN 5% DISCREPANCIES EXIST. THE SAMPLE SIZE WILL BE INCREASED IF DISCREPANCIES ARE FOUND.**

INTEGRATED LOGIC/FUNCTIONAL TESTING

OBJECTIVE:

- FUNCTIONALLY TEST THE OPERATION AND SEQUENCING OF SAFEGUARDS EQUIPMENT FOR CLS/LOOP
- UNDERVOLTAGE (UV) INITIATION (LOOP) TO OCCUR AT DIFFERENT TIMES TO ENSURE PROPER OPERATION OF LOAD SEQUENCE MODIFICATION.

UNIT 1
INTEGRATED LOGIC/FUNCTIONAL TESTING

TEST 1:

- SIMULTANEOUS INITIATION OF ESF AND UV (COINCIDENT CLS/LOOP).
- COMPONENTS OPERATE EXCEPT PUMP BREAKERS IN TEST.

TEST 2:

- ESF ACTUATION WITH UV SIGNAL 2-1/2 MINUTES LATER.
- COMPONENTS OPERATE EXCEPT PUMP BREAKERS IN TEST, EDG START SIGNAL DEFEATED AND SWAPOVER FROM OFFSITE POWER TO EDG DEFEATED.

TEST 3:

- ESF ACTUATION WITH UV SIGNAL 5 MINUTES LATER.
- COMPONENTS OPERATE INCLUDING PUMPS RUNNING ON RECIRCULATION.
- RESISTIVE LOAD BANK USED TO SIMULATE ACTUAL LOAD IN 1J BUS.

UNIT 2 INTEGRATED LOGIC/FUNCTIONAL TESTING

TEST 1

- IDENTICAL TO UNIT 1

TEST 2

- DELETE TEST

BASIS

- INTENT WAS TO VERIFY THAT NEW LOAD SEQUENCING MODIFICATION DID NOT AFFECT ORIGINAL START SEQUENCE OF OUTSIDE RECIRCULATION SPRAY PUMP.
- SUCCESSFUL PERFORMANCE OF THIS TEST ON BOTH TRAINS ON UNIT 1 VALIDATES NEW DESIGN.
- UNIT 2 SEQUENCING MODIFICATION SAME AS UNIT 1. POST-MODIFICATION TESTING WAS PERFORMED.

TEST 3

- IDENTICAL TO UNIT 1 EXCEPT LOAD BANK NOT UTILIZED.

VIRGINIA POWER

COMMENTS & CONCLUSIONS

INTEGRATED LOGIC/FUNCTIONAL TESTING

CONCLUSIONS ON UNIT 2 APPROACH:

- DISCREPANCIES FOUND DURING UNIT 1 TESTING WOULD HAVE BEEN IDENTIFIED VIA THE PROPOSED TEST METHOD.
- COMPLETE FUNCTIONAL OPERATION OF ESF SYSTEM (SI, HI CLS, HI-HI CLS) WITH AN UNDERVOLTAGE SIGNAL WILL STILL BE VERIFIED.
- EDG LOAD CAPABILITY ALREADY VERIFIED EITHER BY ACTUAL TESTING OR CERTIFICATION.

JUSTIFICATION FOR CONTINUED OPERATION SURRY POWER STATION - UNITS 1 AND 2 UTILIZATION OF A TEMPORARY SERVICE WATER SUPPLY LINE

1.0 BACKGROUND

Service water for Surry Units 1 and 2 is supplied from the main circulating water systems upstream of the 96-inch isolation valves at the condensers on each unit. Service water is provided to various components by gravity flow due to the elevation difference between the intake canal and the discharge canal, and in some cases is assisted by in-line pumps. Equipment and systems cooled by service water include the recirculation spray heat exchangers, component cooling heat exchangers, bearing cooling heat exchangers, control room air conditioning chiller condensers, charging pump service water subsystems, and various other heat loads. Service water to the charging pump service water subsystems and the control and relay room air conditioning chiller condensers is supplied by two six-inch fiberglass lines, one from each unit. Each of these lines, 6"-WS-42-136 (Unit 1) and 6"-WS-151-136 (Unit 2), is buried under the turbine building floor and is classified as nuclear safety related. These six-inch lines are used to provide cooling water to the charging pump lube oil coolers and intermediate seal coolers as well as the three control room air conditioning chiller units.

The existing six-inch piping is susceptible to silting and biological fouling, causing reduced suction pressure at the inlet of the charging pump service water pumps. This buildup of sediment and biological products has required cleaning of the fiberglass pipe to maintain adequate pump suction conditions. The method of cleaning has utilized high pressure water (hydrolasing) which has caused internal erosion in the fiberglass piping. The existing fiberglass piping layout also makes cleaning using this method difficult due to its arrangement and length as well as the lack of access points for cleaning equipment. Following a hydrolaser cleaning in early 1987, the Unit 2 service water pipe was replaced when through wall leakage was detected. Since both lines must remain operable to allow power operation of either unit and since periodic cleaning is required, the present piping system needs improvement.

To resolve the above concerns a Design Change Package was prepared to replace the six-inch fiberglass piping with larger diameter metallic piping. A third supply line was also included as part of this design change to provide operating flexibility through the use of a spare line during periodic cleaning.

Implementation of the above design improvements will require that one of the existing six-inch fiberglass lines be taken out of service in order to make tie-ins for the new system piping. Implementation also requires use of the action statements allowed by Technical Specifications 3.14.C and 3.23.C (see discussion of Technical Specifications in Section 3.0.

To effect the tie-in of the new system without requiring a two-unit shutdown, it is proposed that a temporary service water supply line be provided to ensure a sufficient supply of service water is provided to permit operating two control and relay room air conditioning chiller units and two charging pump service water pumps at their design conditions. The temporary line will be dedicated to providing full flow to one control and relay room chiller service water pump. It will be required to use the temporary line 4 times during operating periods of 24 hours or less to effect the necessary tie-ins of the upgraded service water lines.

2.0 SEQUENCE OF WORK

The following sequence outlines the major steps and discusses the contingency measures required based on performing the major portion of the construction work during power operation of Unit 1 and/or Unit 2. Prior to any entry into a 24-hour action statement the temporary line will be placed in service.

Construction Sequence

4 X. Remove existing Unit 2 line from service and enter 24-hour action statement. Eliminate the cross connect line in the Unit 2 SW valve pit. This allows the two Unit 2 sources to be isolated independently. Reinstate the Unit 2 line (via 2-SW-11) and exit the 24-hour action statement.

2. Prefabricate the new common line and the new Units 1 and 2 lines to maximum practical extent.

3. Prefabricate the new Unit 1, Unit 2, and the new common line eight-inch pipe sections to be located in the Turbine Building-Mechanical Equipment Room (TB-MER).

4. Remove plates, excavate and enlarge existing Unit 2 trench and core drill TB-MER and MER-3 walls. During excavation, the existing operating line will be protected by backfill and the existing metal plate. The following contingency measures will be in place during this work.

   a. Fire watches posted as required.

   b. No heavy lifting outside the scope of this replacement will be permitted over or near the excavation while it is open. Lifting of material required for this replacement project over the existing fiberglass line will be minimized.

5. Install new common line in trench and tie-in new 8" common line to the new common line source (valve 2-SW-474) at Unit 2 SW valve pit. During line installation, the existing operating line will be protected by backfill and a steel plate.

6. Remove Unit 2 line from service and enter the 24-hour action statement. Install a temporary jumper between new 8" common line and existing Unit 2 fiberglass line in the trench. The Unit 2 alternate flow path now consists partially of 8" copper-nickel and partially 6" fiberglass. Exit the 24-hour action statement.

7. Install new 8" Unit 2 line in trench, at the TB-MER wall and tie-in new 8" Unit 2 line to the new Unit 2 8-inch source (8" valve 2-SW-11) at the Unit 2 SW valve pit. The original 6 inch valve 2-SW-11 is blanked off.

8. Remove Unit 2 alternate line from service and enter 24-hour action statement. Make tie-in through new core drill in the TB-MER/MER-3 wall. Shift flow from the alternate Unit 2 line to the new Unit 2 line. Exit the 24-hour action statement.

9. Replace the temporary jumper of step 6 with permanent 8" Cu-Ni piping. Complete installation of new 8" common line.

10. Remove the existing Unit 1 line from service and enter 24-hour action statement. Make the permanent Cu-Ni tie-in for the Unit 1 line in the TB-MER 3 room. At this point, two new independent flow paths exist. Both originate in the Unit 2 SW valve pit from separate sources, travel in separate lines and supply the MER-3 components. Exit the 24-hour action statement.

11. Install the permanent Unit 1 8-inch line without any impact on system operation i.e., installation of the new Unit 1 line will not require use of the 24-hour action statement.

12. During the next Unit 2 refueling outage, stop-log screenwell 2A and permanently remove the original 6-inch Unit 2 supply valve (2-SW-11) and upstream piping in the Unit 2 SW valve pit.

Upon completion of this work, three new eight-inch copper-nickel supply lines will be operable.

The temporary line will be fabricated and installed in accordance with the design criteria given in Section 4.0 and routed as shown by the sketches given in Section 9.0. The temporary line emanates as a 6 inch line from a service water valve pit downstream of service water valve 2-SW-MOV-202A. The 6 inch line runs through the Unit 2 turbine building to the wall of the turbine building mechanical equipment room (TB-MER), where it is reduced in size to 4 inches. It then passes through the TB-MER and enters MER-3 where it is connected via a removable spool piece to the suction of control and relay room chiller service water pump 1-VS-P-1C. The temporary line will be installed prior to performing Step 1.

The 24-hour JCO periods for use of the temporary line occur during the performance of steps 1, 6, 8, 10.

The temporary line will be temporarily disconnected via the spool piece in the line following the completion of steps 1, 6 and 8. The temporary line will be permanently removed following the completion of step 10.

3.0 EVALUATION OF TECHNICAL SPECIFICATIONS

Technical Specification 3.14.A.5 requires that two service water flow paths to the charging pump service water subsystem of a unit be operable whenever the reactor is critical or RCS temperature and pressure are above 350°F and 450 psig, respectively. Technical Specification 3.14.C permits unit operation with only one operable flow path to the charging pump service water subsystem. If two flow paths are not restored within 24 hours, the reactor must be placed in a hot shutdown condition. Therefore, the requirements of Technical Specifications 3.14 which address the charging pump service water system can be met if one existing 6" supply line is taken out of service for less than 24 hours.

Interim Technical Specification 3.23.C.1 addresses operation of the control and relay room chiller units. All three chiller units must be operable whenever either unit is above cold shutdown. If one chiller unit becomes inoperable, it must be restored to operable status within 7 days or both units must be placed in a hot shutdown condition. In addition to this interim technical specification, system operating restrictions have been placed on the control and relay room air conditioning system until permanent system improvements have been implemented. The restrictions include requiring the operation of two chiller units. However, use of only one service water supply line is not sufficient for operation of two chillers and two charging pump service water pumps. A temporary source of service water is required during those periods of time in which one permanent service water supply is taken out of service to make the new system tie-ins.

Use of the temporary service water supply line will be restricted to four 24-hour periods. It will be used in conjunction with one permanent service water header to supply the chillers and charging pump service water pumps. Because this condition is not explicitly addressed in any Technical Specification limiting condition for operation, discretionary enforcement is requested to permit this operating configuration.

4.0 DESIGN CONSIDERATIONS OF THE TEMPORARY SERVICE WATER LINE

The temporary service water supply line to the control and relay room chiller service water pump (1-WS-P-1C) has been designed with the following features:

1. The line is fabricated and installed in accordance with Surry Plant Piping Specification NUS-20 for safety-related piping and Pipe Class Design Standard STD-MEN-0004 for Class 151 piping.

2. Class 151 (150 lb carbon steel) is suitable for the design condition of 25 psig and 95°F. Carbon steel is suitable for use with service water in this application. Corrosion of carbon steel is not a concern since the line will be in service for short durations.

3. Piping materials are specified to ASTM requirements. CMTRs are required for all pressure retaining components.

4. The temporary line is tested prior to use in accordance with the design change package requirements.

5. The line generally meets the "safety-related" requirements of service water piping, except the line is not seismic and is not missile protected.

The rationale for accepting the temporary line as operable although nonseismic and nonmissile protected is based on the following considerations and expected plant conditions when the line is in service.

1. The service water system is a moderate energy system, and postulated failure of the piping is limited to through wall cracks. The impact of the flooding of safety-related components due to failure of the circulating water piping has been evaluated in the UFSAR and exceeds the potential flooded volume of the temporary line and is therefore bounding.

2. Use of the temporary line will be limited to four 24-hour time periods. The probability of a seismic event during this period is small. Although the line has not been seismically designed, its failure during a seismic event is not expected.

5.0 CONSTRUCTION CONSIDERATIONS OF TEMPORARY LINE

The temporary line will be utilized during four 24-hour time periods. Construction work requiring the use of this line will be completed within this time period due to the following considerations.

1. All required replacement equipment will be on hand prior to starting work.

2. Detailed schedules define the work to be accomplished during the 24-hour time periods.

3. Pre-staging requirements ensure that proper procedures, personnel and equipment are coordinated to meet or exceed the established schedules. Pre-staging includes contingency measures such as the availability of patch kits for fiberglass pipe in the unlikely event that a fiberglass pipe sustained localized damage during construction.

6.0 OPERATIONAL CONSIDERATIONS OF JUMPER

Continued operation of two service water supply lines is necessary when either unit is at power. The potential impact of a loss of service water to the control

and relay room chiller units has been reviewed. The following actions will be taken to reduce the vulnerability to a loss of service water:

1. Operators will be assigned to control and monitor system operation when the temporary line is in service. The operators will carry out actions as directed by the Control Room.

2. Prior to entering the 24-hour JCO periods, the operating shifts will be briefed on the Abnormal Procedures and Emergency Operating Procedures that would be used upon loss of service water.

3. Anticipated operational concerns are minimized by the short duration (24 hours or less) of use of the temporary line.

4. Final connection of the temporary supply line to the service water system in MER-3 is made by use of a flanged spoolpiece. When the temporary line is not in service, its isolation valves will be closed and the spoolpiece will be removed.

5. In the extremely unlikely event of failure of the temporary line due to a seismic event, the line would be isolated if directed by the control room. Shutdown of both units would proceed it two service water supply lines are not available.

7.0 UNREVIEWED SAFETY QUESTION CONSIDERATIONS

Installation of the temporary service water supply line to the control and relay room chiller service water pump does not constitute an "Unreviewed Safety Question" as defined in 10 CFR 50.59. Operation of the alternate service water flow path does not:

1. Increase the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety and previously evaluated in the UFSAR.

The probability of a loss of service water to the control and relay room chiller service water pump is not significantly increased since the temporary line will be installed and operated in accordance with the compensatory measures identified in the JCO which establishes relative equivalence for the temporary line.

2. Create a possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR.

The possibility for accidents or malfunctions created by these activities has been evaluated in the UFSAR. Flooding of safety-related components due to failure in the circulating water system has been evaluated in the UFSAR. The flooding source which would result from a crack in the temporary line is bounded by the current evaluation.

3. Reduce the margin of safety as defined in the basis for any Technical Specification.

The temporary line will be used only for short periods of time (less than 24 hours). Operation of the temporary line under the conditions imposed will provide sufficient service water flow to meet the design basis requirements for two unit operation.

Construction of the temporary line will be accomplished in accordance with applicable station procedures to ensure that plant safety is maintained.

8.0 CONCLUSION

The existing six-inch fiberglass piping to the control and relay room chiller service water pump and the charging pump service water pumps has experienced problems with respect to sediment and biological fouling. This buildup of sediment and biological products has required cleaning of the fiberglass pipe to maintain adequate pump suction conditions. The method of cleaning has utilized high pressure water (hydrolasing) which has caused

SURRY POWER STATION
SERVICE WATER PIPE REPLACEMENT

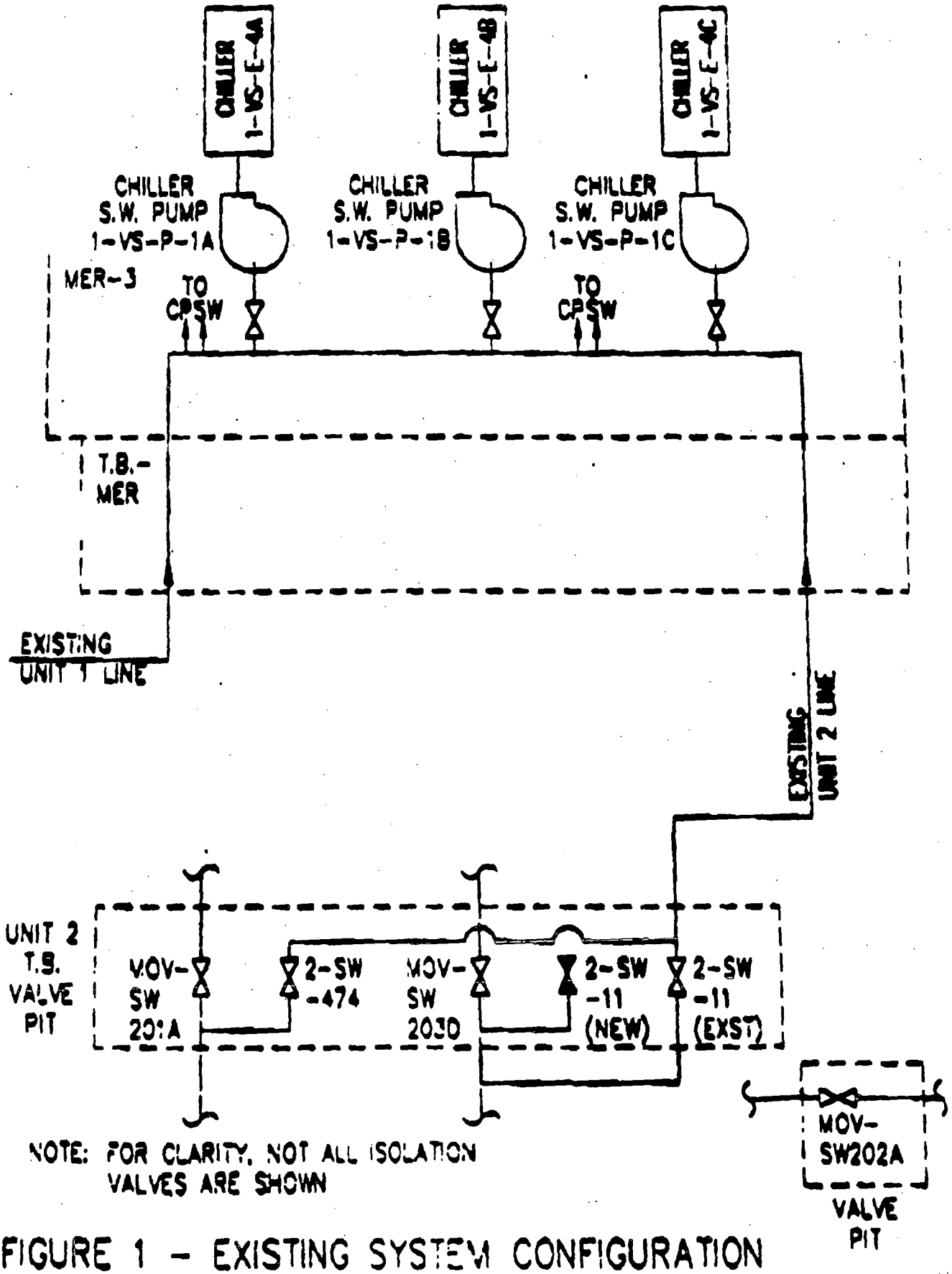


FIGURE 1 – EXISTING SYSTEM CONFIGURATION

SURRY POWER STATION
SERVICE WATER PIPE REPLACEMENT

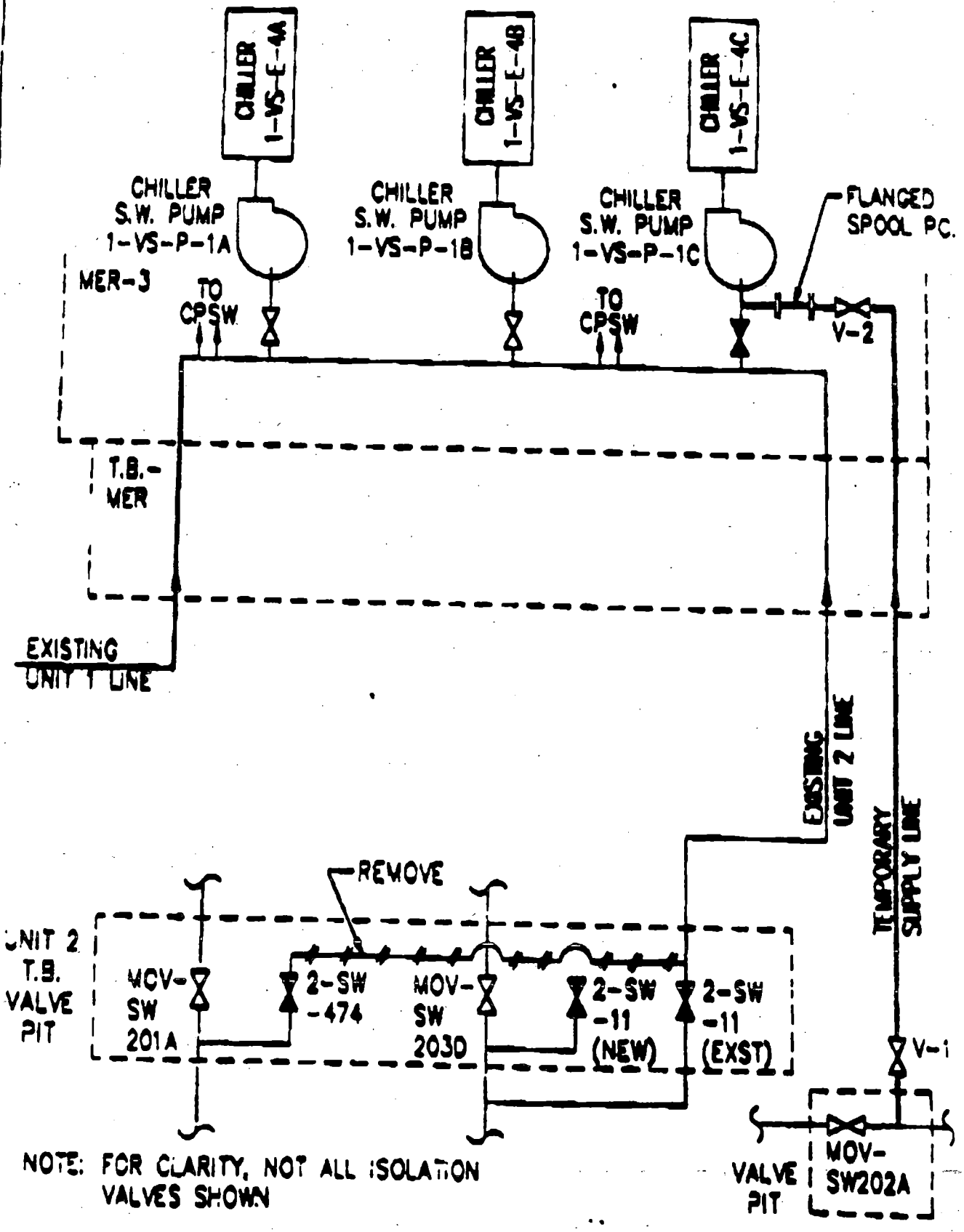


FIGURE 2 – SYSTEM CONFIGURATION FOR STEP 1

SURRY POWER STATION
SERVICE WATER PIPE REPLACEMENT

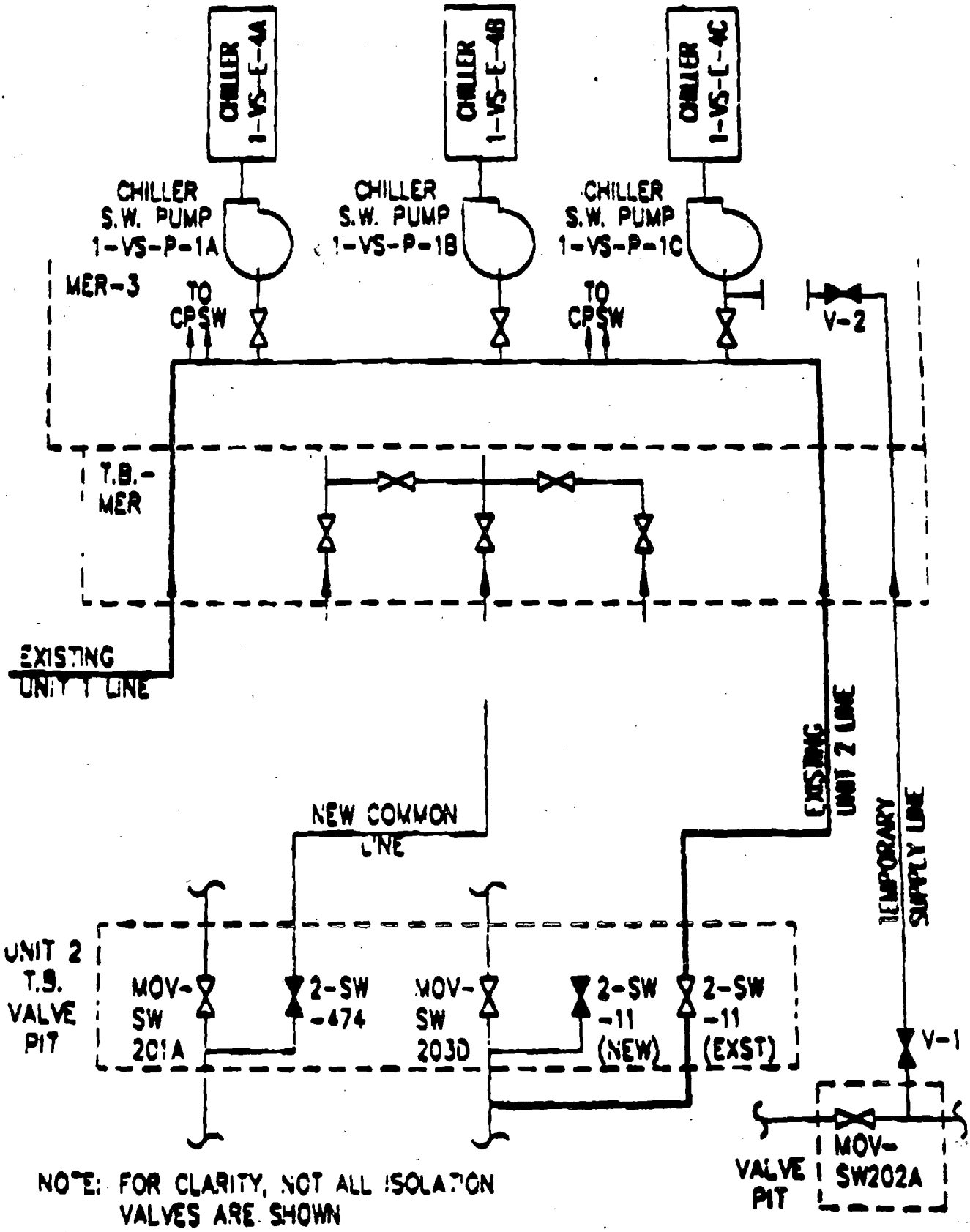
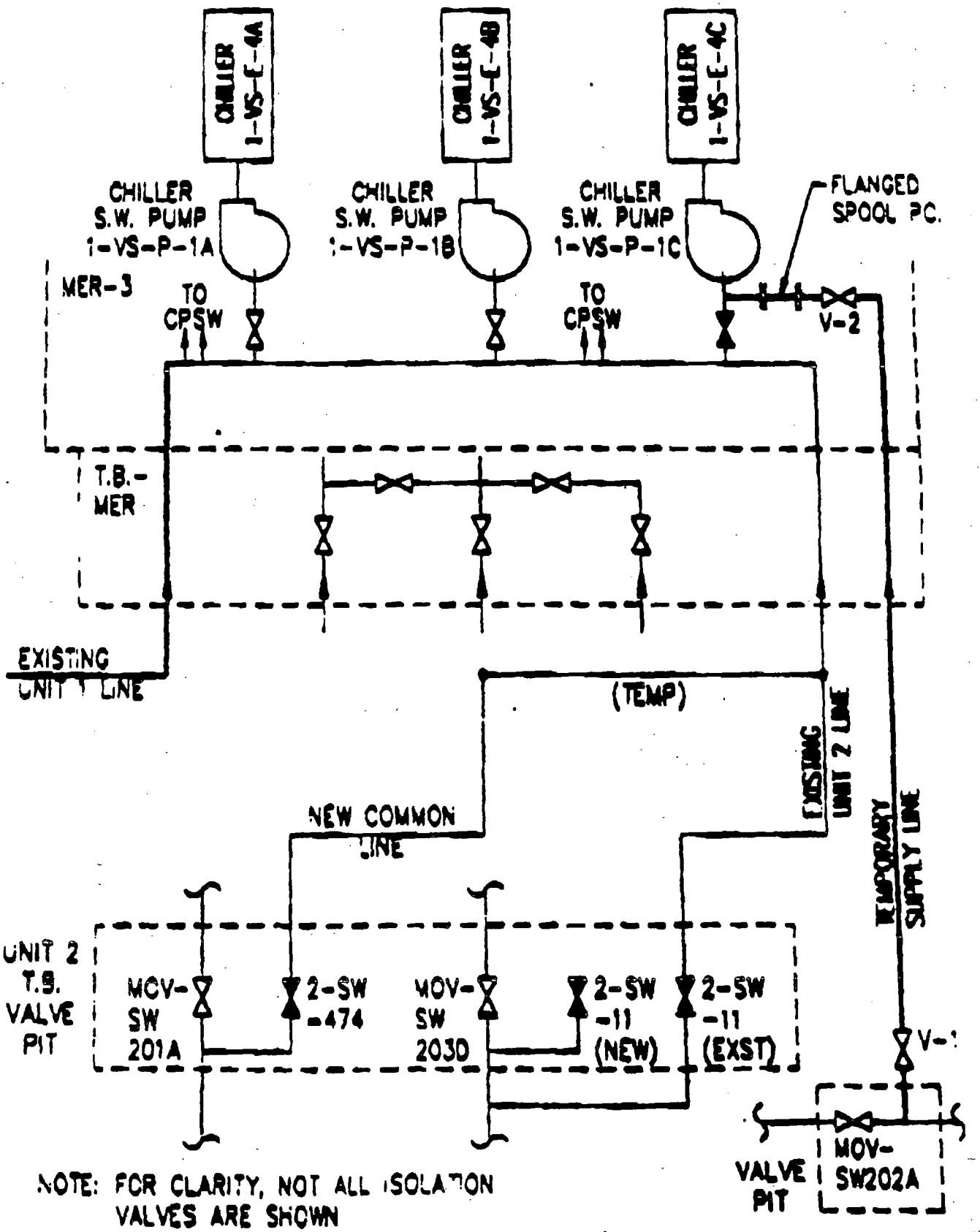


FIGURE 3 - SYSTEM CONFIGURATION AFTER STEP 5

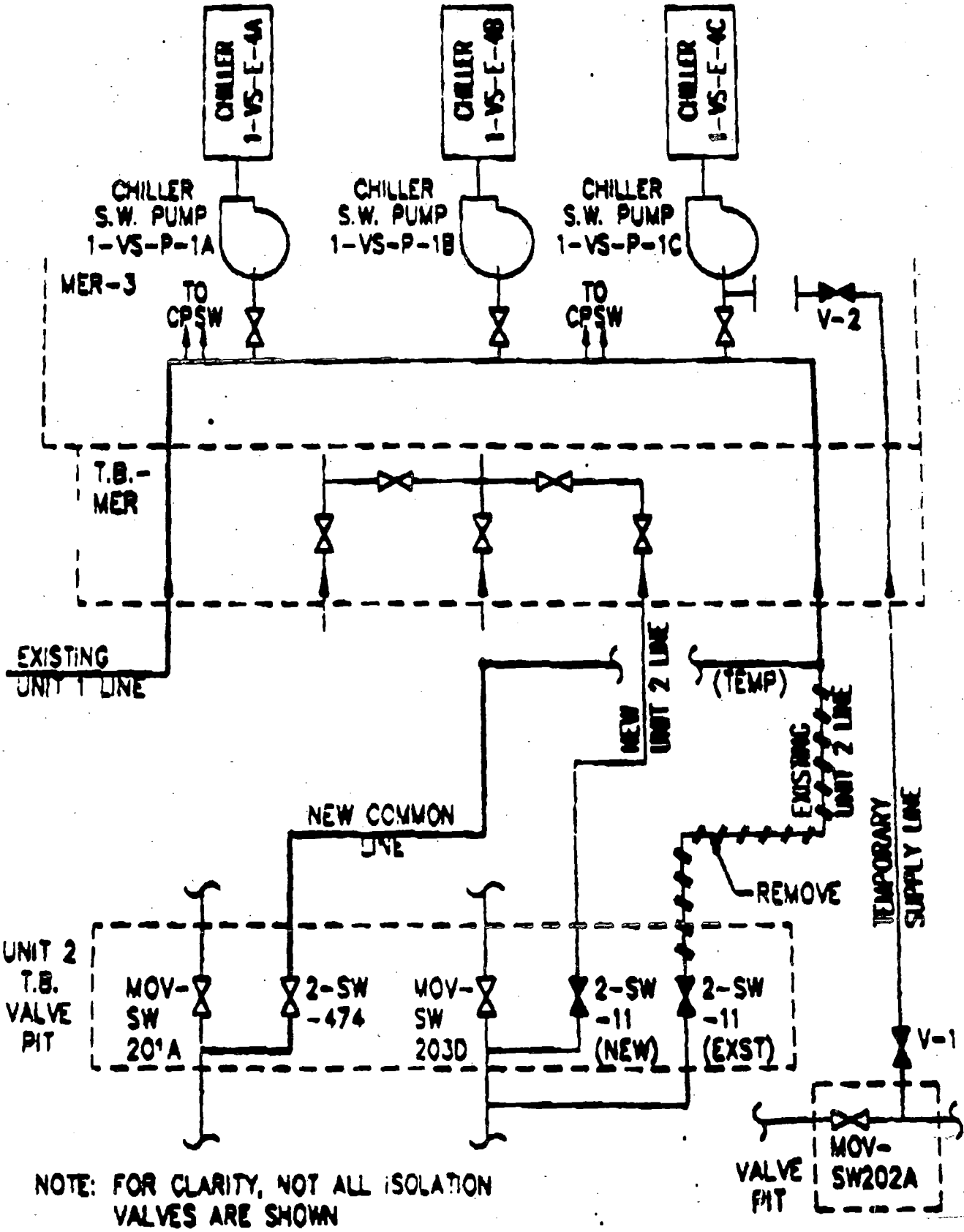
SURRY POWER STATION
SERVICE WATER PIPE REPLACEMENT



NOTE: FOR CLARITY, NOT ALL ISOLATION VALVES ARE SHOWN

FIGURE 4 – SYSTEM CONFIGURATION FOR STEP 6

SURRY POWER STATION
SERVICE WATER PIPE REPLACEMENT



NOTE: FOR CLARITY, NOT ALL ISOLATION VALVES ARE SHOWN

FIGURE 5 - SYSTEM CONFIGURATION FOR STEP 5

SURRY POWER STATION
SERVICE WATER PIPE REPLACEMENT

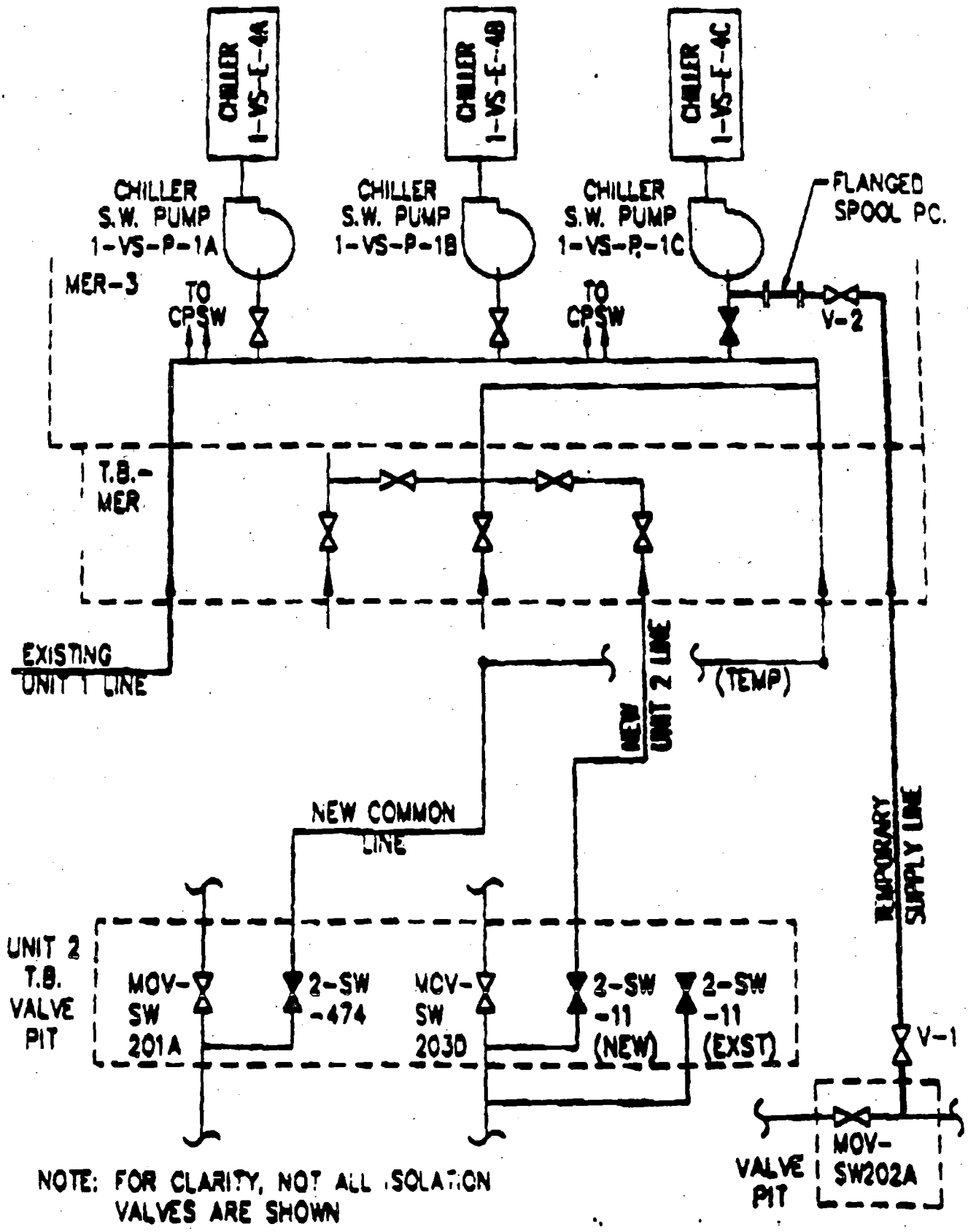
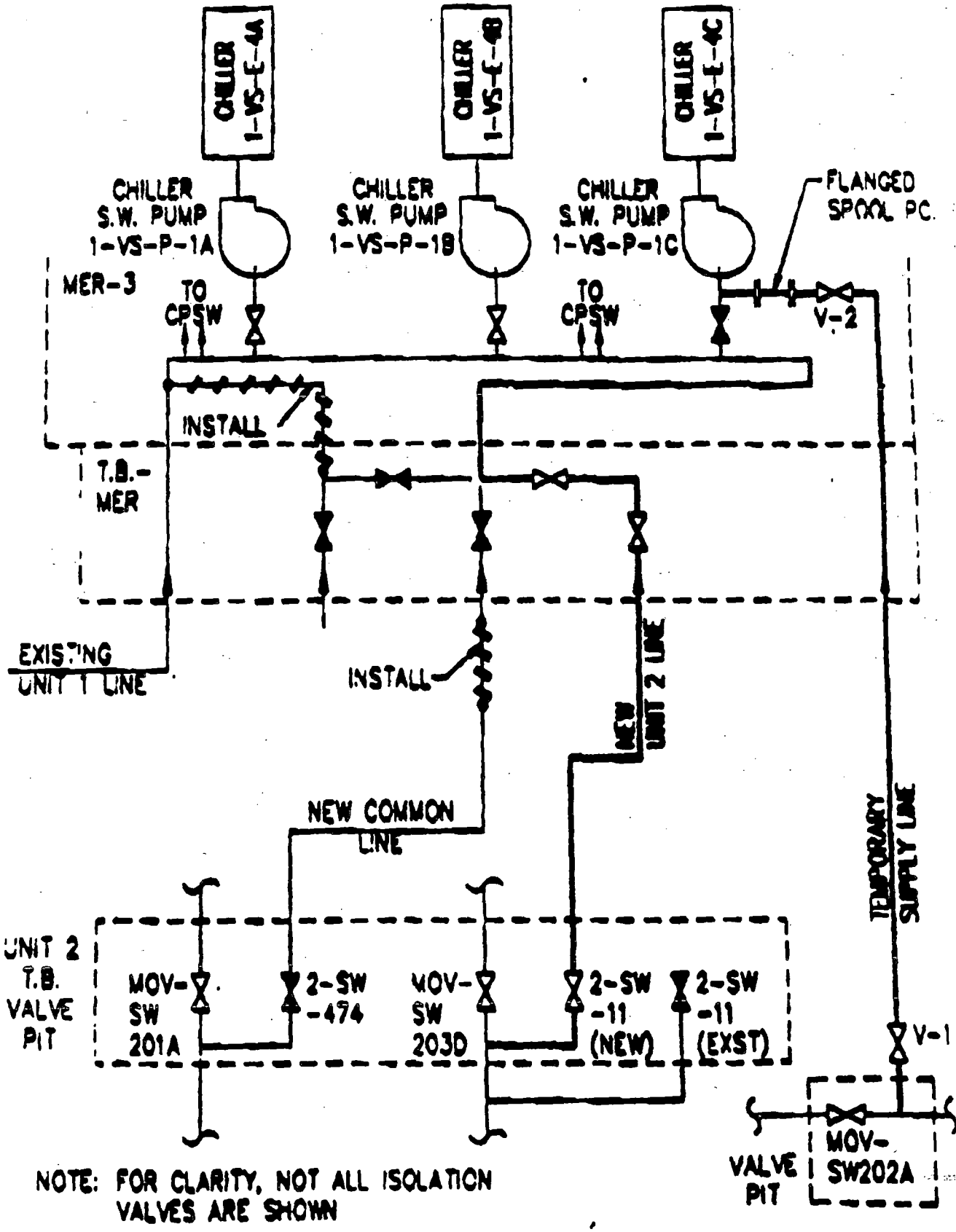


FIGURE 6 – SYSTEM CONFIGURATION FOR STEP 8

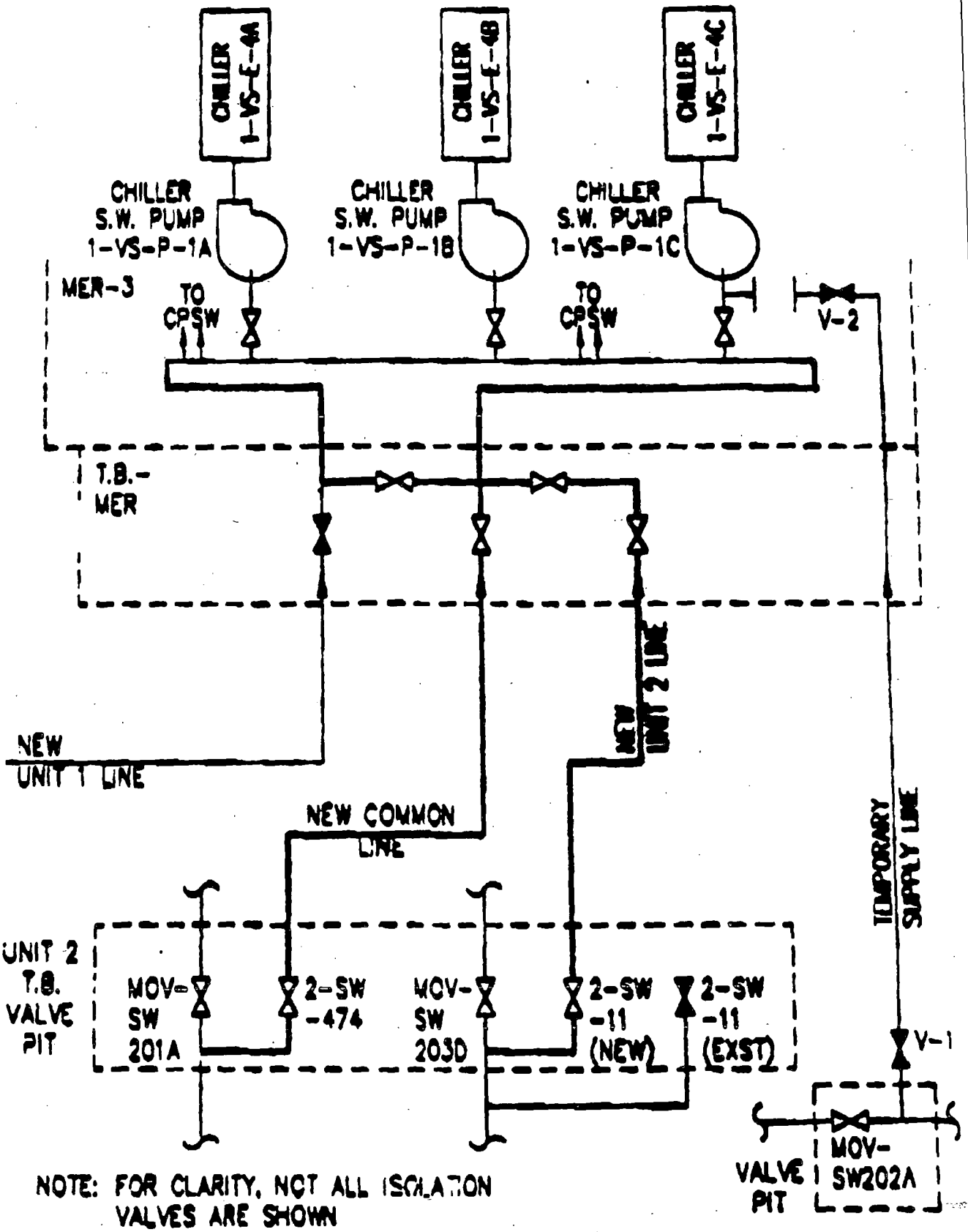
SURRY POWER STATION
SERVICE WATER PIPE REPLACEMENT



NOTE: FOR CLARITY, NOT ALL ISOLATION VALVES ARE SHOWN

FIGURE 7 – SYSTEM CONFIGURATION FOR STEP 10

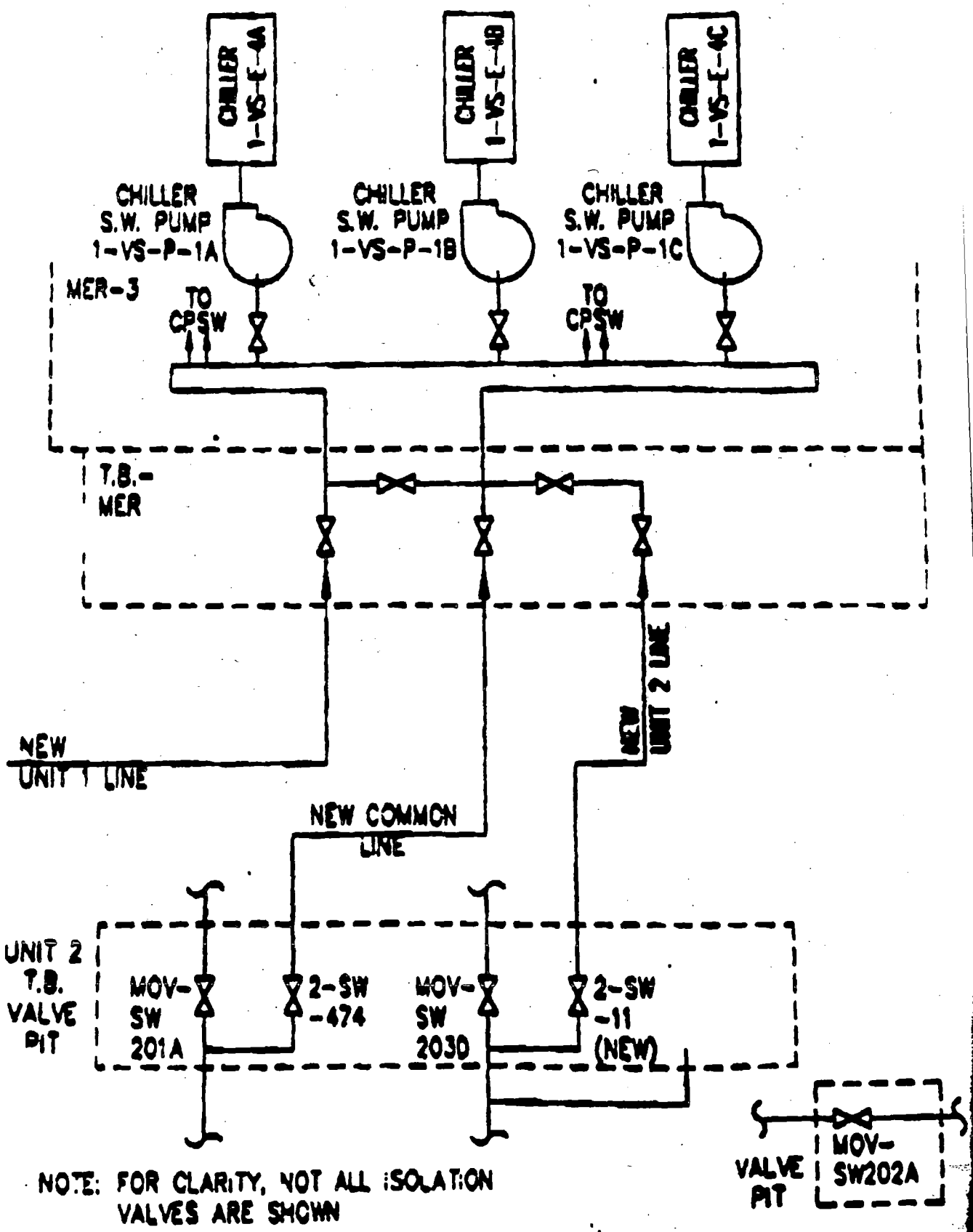
SURRY POWER STATION
SERVICE WATER PIPE REPLACEMENT



NOTE: FOR CLARITY, NOT ALL ISOLATION VALVES ARE SHOWN

FIGURE 8 – SYSTEM CONFIGURATION AFTER STEP 11

SURRY POWER STATION
SERVICE WATER PIPE REPLACEMENT



NOTE: FOR CLARITY, NOT ALL ISOLATION VALVES ARE SHOWN

FIGURE 9 – FINAL SYSTEM CONFIGURATION